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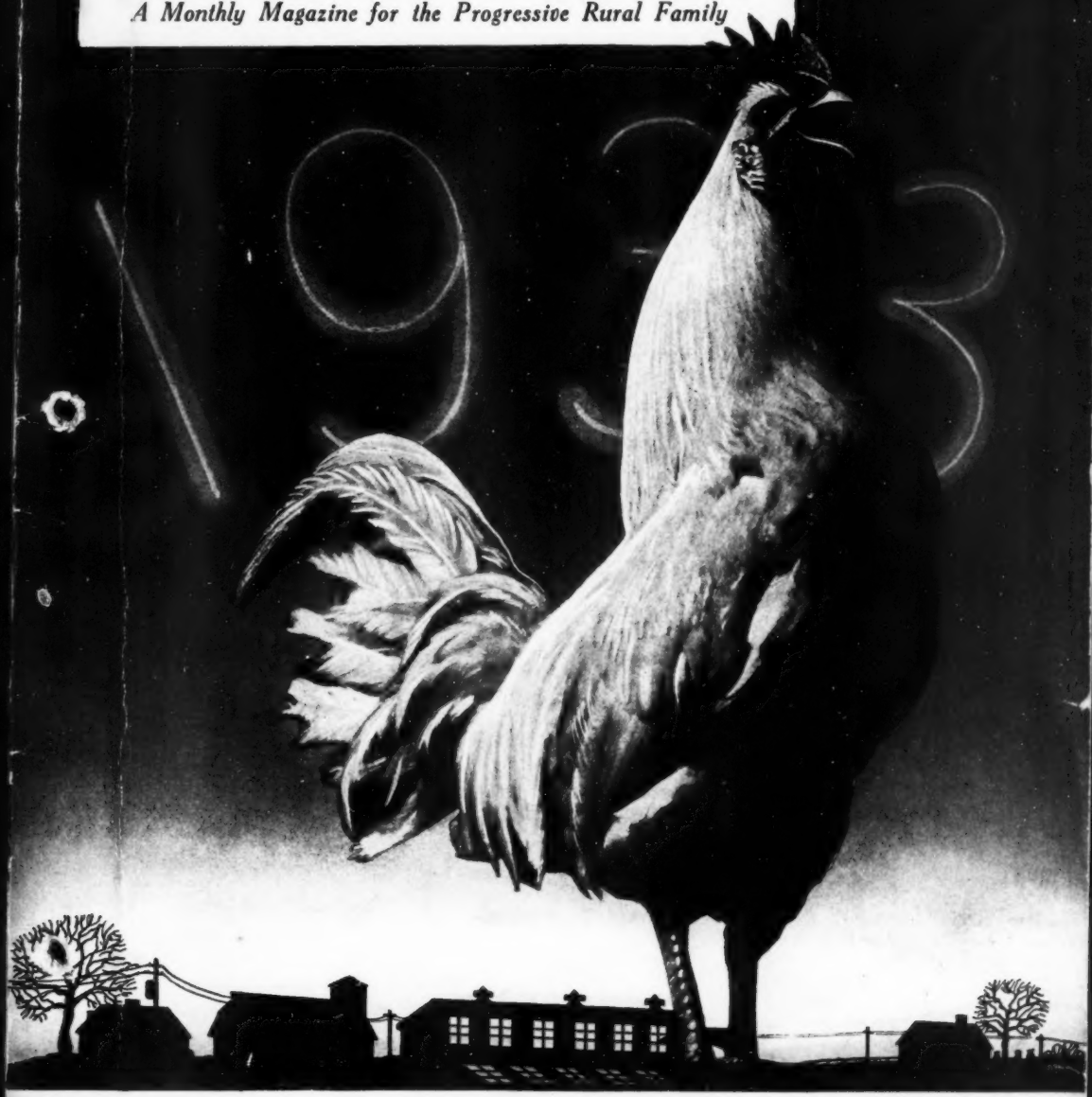
Electricity on the Farm

A Monthly Magazine for the Progressive Rural Family



$50 in cash prizes awarded for the best cover titles.
See inside back cover for rules

JANUARY 1933

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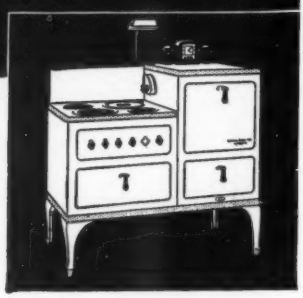
SWIFT AS ELECTRICITY . . CLEAN AS ELECTRIC LIGHT

DOES YOUR *cooking future* LOOK LIKE THIS?

WIPE out all future scouring of soot-blackened pots and pans by installing a General Electric Hotpoint range now. The heat from Calrod, General Electric's magic new heating coil, is so clean that cooking utensils never get black. Pans become as easy to wash as cups and saucers. Calrod's soot-free heat also helps keep kitchen walls and curtains clean.

Investigate the cleanliness, convenience and economy of this modern, scientific method of cooking. Learn how Hotpoint electric cookery preserves the health-giving minerals of food. Discover how the simple, automatic operation of the G-E Hotpoint electric range releases many hours for other duties.



The G-E Hotpoint Hostess (shown above) has warming oven drawer, large utility drawer, thrift cooker and automatic oven heat control.

Hotpoint electric ranges are surprisingly easy to own. You will find a model to suit your purse and needs at your electric dealer or power company. Call and investigate today.

GENERAL ELECTRIC

ELECTRIC Hotpoint RANGE

Edison General Electric Appliance Co., Inc., 5610 W. Taylor Street, Chicago

Keep Informed!

What's New

Reviewed by T. E. HIENTON

Knife Sharpener

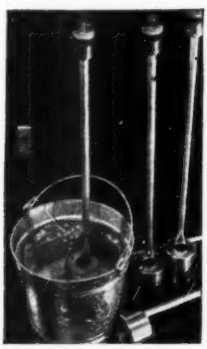
Keeping kitchen knives in a first class cutting condition will be aided by the use of a new knife sharpener which can be attached to one of the popular small mixers and will operate from the same power unit as the other attachments. The sharpening stone is incased in a housing which is painted to harmonize with the grit and dust from the sharpening operation. There is a guide to insure that the blade will be held in the correct position for sharpening and provision is made to change the position of the stone as it wears so that it will always give satisfactory results.

Junior Model Refrigerator

Announcement of a new junior model refrigerator by a well-known manufacturer offers low-priced efficient refrigeration for those who are interested. This flat-topped model has an all-steel cabinet with a porcelain interior and lacquer exterior finish. It is equipped with a stainless steel super-freezer chilling unit, automatic temperature control and carries the standard one-year guarantee. This line includes three sizes, four, five, and seven cubic feet. The five cubic foot size has three shelves with 9.5 square feet of shelf area and two ice trays.

Portable Immersion Heater

Carrying hot water from the house to the poultry house, dairy barn, milk house, or hog barn, may cease to be a daily grind on the farm with the advent of a new portable electric immersion heater. Instead of carrying the hot water, the heater may be carried to the location where the water is needed and the heating done when desirable.



This inexpensive heater is nickel-plated to resist corrosion and is provided with a rubber-covered heater cord which may be disconnected at the top of the heater. The heating element, which is rated at 1300 watts for 115 volts is located in a large round doughnut-shaped section at the bottom. It is recommended by the manufacturer for hot water needs around the farm up to 10 gallons at a time.

What's Advertised

For full details about any of these products write directly to the manufacturers listed, as instructed in their advertising. You'll find these companies have much valuable data for you which will be supplied without obligation.

Electric Ranges — Page

Edison G-E Appliance Co. ..... *Inside Front Cover*
Malleable Iron Range 5
Westinghouse Elec. & Mfg. Co. 6

Refrigerators

General Electric Co. 15
Westinghouse Elec. & Mfg. Co. 6

Water Systems

Cullman Wheel Co. 21
Myers & Bro. Co., F. E. 17
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Water Heaters

Edison G-E Appliance Co. ..... *Inside Front Cover*
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Malleable Iron Range Co. 5
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Dairy Utensil Sterilizers

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Farm Motors

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Stationary Spray Pumps

Myers & Bro. Co., F. E. 17

Electric Poultry Supplies

Lyon Electric Co. 22

Time Switches

Lyon Electric Co. 22
Paragon Electric Co. 22

Clipping Machines

Chicago Flexible Shaft Co. 19

For information about devices not included in the above list and the names of reliable manufacturers—use this handy coupon.

TEAR OFF HERE

Electricity on the Farm, 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying:

....

....

My name is .....

Address .....

..... 1-33

319734

January, 1933

Electricity on the Farm

Vol. 6 No. 1

EDITORIAL

Live today, forgetting the anxiety of the past.—MAXIM OF EPICUREANS

THE past year has been one of trials and apprehension for many. Prices of agricultural products have been unprecedentedly low. Excess production and curtailed consumption have aggravated the situation. What the immediate future holds is uncertain.

This much can be said however: many commercial indices point to improved conditions, even though certain fundamental changes must take place before full recovery can be expected.

Many industrial leaders, who are in a position to know, have expressed their belief that this will be the last severe winter of the present depression. They believe that such constructive developments are now under way as will begin to show their effects in a conspicuous manner before the new year is well under way.

Though the present situation is most trying, there is a far more optimistic outlook just now than at this time last year.

We are confident better times are ahead, and that they are not so far away. We are equally confident that in the future agriculture will get a better break. Certainly it is receiving its share of public attention right now. The difficulties which have beset the farmer are recognized more widely than ever before.

And may we, at this time, extend to our readers the sincere wish that 1933 will bring renewed prosperity and good health in full measure.

THE PUBLISHERS.

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Monarch Fuelectric...

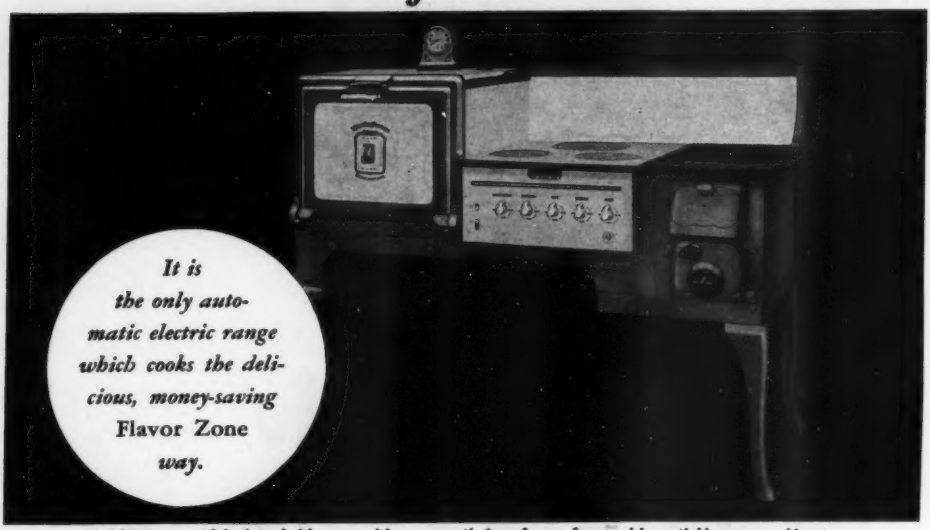
the farm range that has everything

The Monarch Fuelectric is not just another electric range, but one specially designed by experts who really know farm kitchen needs. It brings to the farm kitchen all the convenience and economy of electric cookery and has in addition a fuel fire-box which burns wood, hard or soft coal. Water reservoir (optional) may be equipped with electric heating element or heat from fire box alone. Water front in fire-box if desired. Commodious, yet compact. Large electric oven and three cooking units. Beautiful lines. All over porcelain enamel finish. New low price. Ask your Electric Company or write us for easy payment terms.

Nile Green or Ivory Tan—Plain White if Preferred

MALLEABLE IRON RANGE CO., 400 Lake St., Beaver Dam, Wis.

This Range
COOKS WITH ELECTRICITY OFF most of the time!

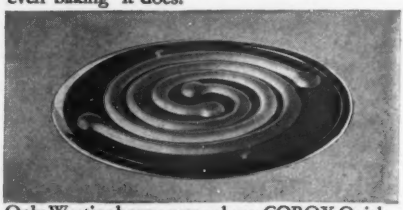


Model DF-831, with built-in fuel burner and hot water coil. One of many farm models available at reasonable prices.

● For a happier New Year resolve to cook this easier, more economical way. Instant, exact cooking heat at the turn of a switch! No soot to scour; no more basting—or hours spent watching the cooking.

FREE BOOK . . . MAIL COUPON

It tells all about the modern convenience and economy of Westinghouse electric cooking. On the farm cooking is an art, as well as a daily necessity. As only a good cook can, you will appreciate the fact that a Westinghouse electric range brings you the old-time goodness of brick Dutch Oven cooking, but *automatically*. First the oven sears and caramelizes the *outside* of a roast, sealing the juicy, flavorful tenderness *inside*. When this *Flavor Zone* is reached cooking finishes on gentle *stored* heat (electricity *off*)—so that the goodness *cannot* cook out. And you'll be delighted with the perfect, even baking it does!



Only Westinghouse ranges have COROX Quick-Cook heating units—*super-fast, super-economical.* They're sealed in steel—forever protected against physical damage. See them at your power company office.

Westinghouse Electric & Mfg. Company,
Section G-1, Merchandising Dept., Mansfield, Ohio

Please send me free literature giving full information about Westinghouse Flavor Zone electric cooking.

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REFRIGERATORS · WATER HEATERS · WASHERS
IRONERS · HUMIDIFIERS · VACUUM CLEANERS
IRONS · TOASTERS · WAFFLE IRONS · PERCOLATORS

[Watch for the thrilling new Westinghouse mystery radio serial by OCTAVUS ROY COHEN . . . coming soon over an NBC Network.]

Fig. 5. George Zittel's propagating bench, rewired for use of two thermostats.

Experiences with ELECTRIC SOIL HEATING in Western New York

By MORRIS LLOYD

ELECTRIC soil heating for the propagation of vegetables and the rooting of cuttings was tried by several market gardeners and florists in western New York during the past season. These trial installations included two propagating benches, two hot beds, and one pair of cutting beds. All of them were heated by insulated lead covered soil heating cable.

One of the hot beds was constructed by Mr. Warren S. Wagner of Williamsville, New York. Mr. Wagner dug a hole deep enough to accommodate a foot of cinders under the soil and heating wire, and 8 feet wide by 50 feet long. Then he constructed a wooden frame 6 feet wide and 48 feet long to be covered by 16 standard hot bed sash. This allowed a fill of cinders 1 foot wide all around the outside of the frame. All of this work was done in the fall before the ground had frozen.

In the spring when he was ready to install the heating cable Mr. Wagner laid about an inch of sand over the cinders, first laying down burlap to keep the sand from filtering into the cinders. Then he arranged the heating cable on top of the sand, so that the strands were about 6 inches apart and ran lengthwise of the bed. Eight separate circuits were used with about 72 feet of the heating cable in each circuit. A separate thermostat was installed for each half of the bed and adjusted to maintain a temperature of about 72 degrees. The cables were covered with another inch of sand and that was covered with about 6 inches of regular hot bed soil.

Fig. 2. Schoellkopf's hotbeds, showing cables in place, and foot of cinders around sides.

Sprouting Growth More Uniform

Mr. Wagner started his hot bed on March 28th. He planted tomatoes, cauliflower, peppers, asters, delphinium and annual phlox. The ground around the bed was quite low and, at that time of year, very wet. There is reason to believe that loss of heat occurred due to dampness in the cinders, but no difficulty was experienced in keeping the propagating soil at 70 degrees. A snowstorm on April 13th preceded by freezing temperature had no bad effect on the bed. After operating the hot bed until May 1st, Mr. Wagner turned the current off and operated it as a cold-frame, turning current on for the next ten days only at night to prevent freezing. He states that the sprouting and growth of all the different seeds was much more uniform and from five to eight days faster than in manure heated beds used formerly. Some of the seeds were four years old, but sprouted as well as if they had been the previous year's product. The energy consumed was 1,496

Fig. 4. Peppers twenty days old, without soil heat.

kilowatt-hours. Mr. Wagner was well satisfied with the results.

The other hot bed installation, made for P. A. Schoellkopf at Lewiston Heights, was similar in detail but consisted of two beds of six sash each. Three circuits of cable, each 72 feet in length were used in each bed. A thermostat was used on each bed, one being set for about 65 degrees, the other for 70. Figure 2 shows these beds just before the cable was covered by sand and soil.

A Practical Application

Mr. Henry Tincknell, who was in charge of the installation and operation of these beds, started them on March 6th. He used them for radishes and lettuce, tomatoes and some early spring plants for the greenhouse. In the last week in April he also started corn in pots in one of the beds, transplanting it to the field, and picking the first corn on July 12th.

This bed was not used for commercial production, but for vegetable and flowers used on the premises. Nevertheless, Mr. Tincknell considers the electrically-heated hot bed one of the most practical applications of electric service which can be made on the farm and considers the cost of operation very economical as compared with manure beds.

Propagating Benches

The two installations in propagating benches were made on February 5th, by Mr. George Zittel and Mr. George H. Agle, both of Eden Valley, New York. They are identical installations, occupying the last 12 feet of a propagating bench 6 ft. wide.

In each case the bench was prepared by cleaning it out thoroughly, a one-inch layer of sand was spread over each bench and the cable laid on this in the same manner as in the hot beds, two 72-foot lengths of cable being used in each installation. Another inch was spread over the cable, and the propagating soil to the depth of four inches completed the work.

Each installation was controlled by one thermostat set for a temperature of 72 degrees.

Mr. Agle started his bench on February 12th; Mr. Zittel on February 6th.

Mr. Agle says that lettuce and cabbage gained two days over normal time of sprouting; tomatoes gained four days. Peppers showed the greatest gain. Peppers and egg plant planted March 10th showed a very healthy growth in twelve days, and in twenty days were ready to transplant to flats. Peppers planted in both the heated and unheated sections of the bench on March 15th, from the same batch of seeds showed a great difference in growth at the end of 15 days. Unheated seedlings were just beginning to break through the surface while heated ones were nearly ready to transplant. Not over five days of sunlight occurred in this time. Figures 3 and 4 show the peppers planted in heated and unheated sections at the end of 20 days. The "unheated" section was warmed by the greenhouse heating system only; the "heated" section was warmed by both house heating system and soil heating cable.

Speeds Up Germination

One morning following a very cold night Mr. Agle found the greenhouse temperature down to 40 degrees, but the propagating bench was unaffected, holding its temperature at 72.

Mr. Zittel found that his lettuce, cabbage and cauliflower gained four to five days in germination, tomatoes gained a week, egg plant and peppers gained ten days. He is thoroughly satisfied

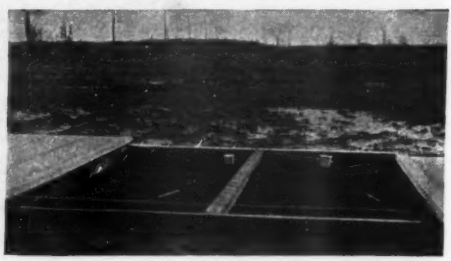


Fig. 1. Thermostats in Wagner's hotbed, showing bulbs ready for burying in soil.

Fig. 3. Peppers twenty days old, supplied with electric soil heat.

with the results. In the eight weeks of operation his installation used 287 kilowatt-hours. In the seven weeks Mr. Agle operated his bench it used 266 kw-hr.

Mr. Zittel operated his house at a lower temperature than in former years while maintaining 70 degrees in the propagating soil. This was healthier for the growing plants in flats and saved enough fuel to more than offset the cost of energy used in the propagating bench. He said that he had much less trouble from "damping off" and "yellow root" on lettuce and peppers.

Mr. Zittel has since had a second thermostat installed, to control one 3 ft. x 12 ft. section of the bench while the first thermostat controls the other half. Thus he can plant either or both halves of the bench at one time, and can operate the two at different temperatures. Figure 5 shows the rewired bench with the two thermostats in place. Another one-inch layer of sand, and a sheet of hardware cloth will be put on next; then the propagating soil.

Cutting Beds

One installation of soil heating cable was made for rooting flower cuttings. This is a pair of 16-inch beds at Chase Bros. Nursery, Honeoye Falls. These beds were prepared in the same manner as the hotbeds previously described, except that the soil consists of seven inches of sand. Lilac cuttings were planted.

For comparative purposes two beds adjacent to these and heated by manure, were started at the same time. Soil temperatures were reported in all beds at 7:15 each morning, and the high and low outside temperatures were taken from a recording thermometer. At the end of one month the electrically heated beds were still delivering a practically constant heat, varying from 76 to 72 degrees, while those heated with manure varied from 80 the first day to 60 on the 15th day, and up to 68 on the 30th day. At this time a fifth bed without any heat was started and since then its temperature has followed that of the manure beds, thus showing that the manure had lost its heating value at the end of 30 days.

The beds were started June 20th. By July 30th, forty days later, the electrically heated beds had used a total of 523 kw-hr, or less than ½-kw-hr per sash per day.

The owners are well satisfied, for the cuttings rooted in about 65 days instead of the usual 90 required in the manure-heated beds, and, moreover, the growth of roots was more uniform and healthier.

All of these installations have been the objects of considerable interest to florists and vegetable growers nearby, and have amply demonstrated the practicability of this new application of electricity to agriculture.

New Poultry Water Warmers

By Geo. W. Kable

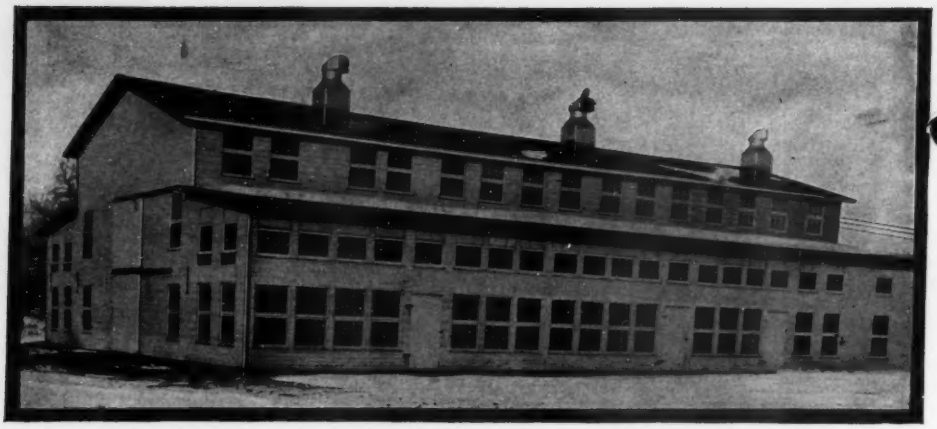
A COLD snap is usually accompanied by a sharp dropping off in egg production and frequent trips to the hen house with buckets of warm water. To avoid all this there are several new water warmers on the market.

Two far western companies are manufacturing new types of immersion heaters. The heating elements are placed inside of ⅜ in. galvanized iron pipe which may be bent into shape to fit any container. These pipes are sealed so there can be no shorting of the heating elements or leakage of current into the drinking water.

Construction of Unit

The very newest newcomer among drinking water warmers is one just put out by a large eastern concern. It is a "sealed in rubber" unit, there being no joints and no metal parts accessible except the two metal prongs extending from the vulcanized rubber plug. The heating unit itself is made up of fine resistance wire vulcanized in a little rubber pad ⅛ in. thick, 3 in. wide, and 9 in. long. The rating of the heater is 30 watts —sufficient to keep water from freezing in most containers at winter temperatures, and with a very small consumption of power. In a test we held 4 gallons of water in a galvanized iron pail at a temperature 16 degrees above the temperature of the water in a similar pail without heat. The rubber pad vulcanized securely to the rubber extension cord is an innovation. It promises long life and eliminates the troublesome connection between cord and heating unit.

All of the above heaters are quite reasonable in price and adaptable to all shapes of containers. They may be used on any lighting or power circuit.



Electrically equipped poultry house of J. O. James, Wood County, Ohio.

BETTER BROODS ARE BUILT

with the assistance of electrical equipment

By HARRY R. O'BRIEN

WITHIN the past few years several incubator manufacturers have brought out incubators that are equipped electrically. These new type machines use current both for ventilating the interior of the incubator and for heat. Also methods of installing electricity in machines already in use have been worked out.

I recently talked with Charles L. Sawyer, a hatcheryman of Hoytville, Wood County, Ohio. Mr. Sawyer is nationally known in the hatching and poultry world. He has served as president of the Ohio Baby Chick Association, was president of the Ohio Poultry Improvement Association and has served as an officer of the International Baby Chick Association. I asked him about electricity and the hatcheryman and poultry farmers.

He told me that one year he changed over five incubators, each with 47,000 egg capacity, to electrical operation. All his incubators are ventilated and lighted with electric current. Ventilating fans are used to change the air in the hatchery rooms by forcing hot and cold air as needed. These fans also do the same for the offices.

Mr. Sawyer and Charles A. Stock, his partner and production manager, ran tests with incubators using steam and others using electricity and found that chicks that came out of the electrically operated incubators were more uniform in quality. One of the pioneer electrical incubator manufacturers has been making similar claims for his machines for several years.

About 350 cooperating poultry breeders supply eggs for the five branches operated by the hatchery company of Mr. Sawyer and Mr. Stock. Mr. Sawyer told me that within the past five years half or more of these breeders have installed electricity in their laying houses and use lights in winter to increase egg production. Many also use current to heat drinking water for the layers.

"This means just as much to the hatchery as it does to the poultryman," said Mr. Sawyer. "You see, the five branches of our hatchery are all Ohio accredited. We have invested a good bit of money in paying the expenses of having these flocks culled under rules of the Ohio Poultry Improvement Association and for their inspection by a representative of the Association. One season we spent $7,500 in buying pedigreed male birds to put in these flocks.

"In return for such expenses we want eggs from these improved flocks and want them at the right time. We set our first incubators in late December. By the first of February all five branches are in full operation. It takes 500,000 eggs to fill our present incubator capacity.

"So we're interested in getting eggs during these winter months, just as much as is the poultryman. If our cooperating breeders give their birds warm water and install electric lights in their houses to prolong the working day of the hen and thus help to produce us eggs for hatching when we need them, you can just bet we're glad to have them do it and be thankful for the blessings of the electric current."

This hatchery made arrangements with one of the leading poultry breeders in northern Ohio to operate a master breeding farm where pedigreed stock is produced to introduce into the flocks of the cooperating poultrymen who supply eggs to

the hatchery. This breeder maintains a flock of 2,500 birds, housing them in a new modern type house with three stories. He is trapnesting 500 hens under the supervision of the Ohio Record of Performance branch of the Ohio Poultry Improvement Association.

Serves in Many Ways

Mr. Sawyer took me out to visit this particular breeder, and in talking with him I asked him about the use he made of electricity.

"If our electric current were to be cut off," he replied, "it would double the labor of caring for these 2,500 hens, just because of lighting and water supply. It takes three gallons of water a day for each 100 hens. We have water piped all through this laying house, on all floors. In summer we run the pipes right out on the range where water is needed. Just think what a job it would be if we had to carry all that water.

"We use lights of course in all the laying pens in winter to increase production. Then there is the great convenience of lights to help us get the work done after daylight hours."

I know of another Ohio poultryman who has a combined breeding farm and hatchery where there is a total of 22 electric motors of all sizes in use on the farm, in the hatchery and residences, ranging from sewing machines and pump to feed grinder and mimeograph machine in the hatchery office.

In such manner is the poultry industry, farm and hatchery both, being electrified to the benefit of breeder, hatcheryman and buyer of chicks.

Bundy hatching machine with several compartments open.

When the Pump Paid for Itself

By Mrs. C. B. Turner, Wayne, N. Y.

WHEN we had the gas from our own gas well piped into the house last July we installed besides our gas range a water system for kitchen and bath-room heated by a gas-heater and pumped with an electric pump.

We certainly enjoyed having hot and cold water at the turn of a faucet and the use of the bathroom. But it was not until October 13th that we fully appreciated what electricity could do for us.

The peace of that quiet October morning was broken by a pounding on the door and a voice shouting "The barn is on fire." A glance showed a neighbor's barn within 100 feet a mass of flames, the breeze blowing toward our house, no man at home at either place and the nearest fire-engine eight miles away. To complicate matters a completed gas well from which gas was escaping had been drilled a short time before very near the barn. Fortunately this did not catch fire.

Neighbors came by dozens. Though the water supply was limited, a hose was attached to an outside faucet and then that electric pump began its work, as the men on the roof kept the water from the hose playing on the sparks which were constantly dropping. The heat was almost unbearable. Fortunately the water not absorbed by the roof ran back down into the cistern and was used again and again.

Though the roof of the house was scorched, the house was saved and that little electric pump never complained once though it worked ceaselessly for over half an hour without any attention.

The picture shows the ruins of the barn and the back of the house which was saved by the constant work of the little electric pump. We feel the pump paid for itself at this fire.

Ruins of destroyed barn, and house saved by electric pump.

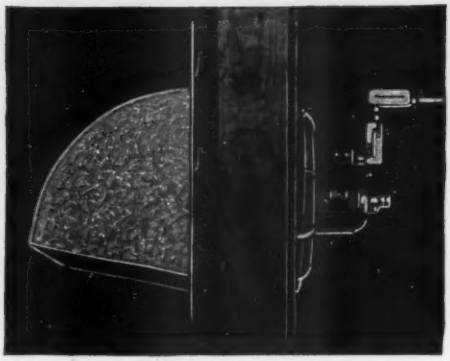


Fig. 1—The simple disc fan, protected against the weather by a hood. Unit is equipped with butterfly valves.

BARN VENTILATION PAYS

By JOHN M. LARSON

EVERY keeper of livestock, at some time or another, is confronted with the problem of proper ventilation in his buildings. He has no barometer with which to tell whether or not he is getting the proper ventilation or if the building he is concerned about needs ventilation.

Many people think that tuberculosis is caused by poor ventilation, but there is no data available to substantiate this. There is no doubt, however, that if an animal is kept in a well ventilated place, she will have a far better chance to keep herself in a better condition to combat any diseases that she may be exposed to. Consequently, good ventilation is a cheap way to insure against the loss from many diseases.

The most practical way of telling whether or not a barn needs ventilation, is by observation. If the air in a barn smells strongly, or if the walls and ceiling are damp, the barn needs ventilating. The latter is usually the best indicator and if it is eliminated in barns not heated artificially, all ventilating requirements will be pretty well taken care of. Dry and odorless air is the main objective in barn ventilation.

Moisture in Barn Destructive

Moisture on barn walls is caused by warm, damp air coming in contact with cool walls and condensing there. The moisture that is in the air is given off by the animals and from moisture on the floor being evaporated. If this moisture is not removed, everything in the barn soon becomes damp and decay takes place in all wooden parts and the steel equipment becomes rusty and requires painting frequently, which is all very expensive. If the air in a barn is too damp the cow's skin does not respire properly and she becomes sluggish and is consequently not at her best.

It is a well known fact that the warmer air is, the more moisture it is capable of holding. Moist, cold air, when heated, becomes dryer and can absorb moisture. If the moist, warm air in a barn is discharged and cold dry air comes in to take its place, the amount of moisture in a barn is naturally reduced. That is the principle of a ventilating system. However, dry walls do not always indicate good ventilation nor do wet walls indicate poor ventilation, because the material from which the barn is constructed and workmanship affect this condition very materially.

One thing that is primarily essential for the comfort of a cow is a warm barn. Unless a barn is so constructed that a temperature of at least 40 or 45° can be maintained, it is too cold for comfort and almost impossible to do a good job of ventilating. A few dollars spent in insulating a barn will pay good dividends in terms of increased production, lessen worries about frozen water pipes and make good and controlled ventilation much easier.

Electric Ventilation

Gravity ventilating systems have been used for several decades and have, in most cases, been very satisfactory, but now since a fair percentage of the farms in this country are equipped with electric service and many more are getting connected, the electric fan for barn ventilation is rapidly coming into use.

The reasons that it is gaining in popularity so rapidly, are:

1. Lower original cost. The gravity systems usually cost from $20 to $30 per cow while fan systems cost from $5 to $10 per cow.
2. Ease of installation. The electric fan systems can be put into any building, old or new, in winter or summer, with very little labor.
3. The fans can be made to operate thermostatically to fit the temperature conditions.
4. The operating cost is low.
5. Operate when needed and can be shut off when not needed.
6. Small systems can be started and then added to later on.

There are several types of ventilating systems on the market. The type to select will depend somewhat on the barn and on the conditions in the barn.

The following is a discussion of the various types of systems and the place where each type is best adapted. The first type to consider will be the simplest type and the one that will probably become the most common. This is illustrated in Figure 1. It consists of a simple disc fan inserted in the wall with a hood over it to protect it against the weather. In addition to the hood there are a pair of butterfly valves that open by the draft of the fan and close again automatically when the fan is shut off. The purpose of the butterfly valve is to prevent back drafts. This fan is installed near the ceiling so as to draw out of the barn the moisture laden warm air that is at the ceiling. Figure 1 also shows how easily a fan can be installed in almost any wall. It also shows how insulating material can be applied to the walls.

Figure 2 shows another type of installation. This one is primarily designed for the man who wishes to take the air off at the floor line part of the time. By closing the opening at the top and opening the damper inside of the duct, the air is drawn into the bottom of the duct or by closing the damper and opening the louvres at the top, the air is drawn off near the ceiling line.

Where Solid Walls Are Encountered

In some barns, the walls are constructed of stone or solid concrete as shown in Figure 3. In this case a vertical type of fan is used and is placed in the ceiling with an elbowed pipe for delivery. A hood and louvre are used with this, in the same manner as in Figure 1. A duct, similar to the one in Figure 2 is used with a damper in the middle and a small door at the top to permit taking air off at the ceiling or the floor as desired. The duct above the ceiling or in the hay mow should be insulated as shown, to prevent condensation of moisture in the pipe which would create a bad condition for the entire unit. In this illustration is shown how insulating material can be applied to a solid stone wall, which is a vital point in the success of a good ventilating job.

Left, Fig 2—With this type of ventilator, air can be drawn out either at the floor or ceiling level. Right, Fig. 3—Vertical type fan for installation where brick or concrete walls are encountered.

The type of system to select will depend to a great extent upon the conditions in the barn. The above described systems are all satisfactory when properly installed.

The methods of controlling the operation of these fans are somewhat varied. The simplest method of control is of course, the ordinary manual control, in which the operator turns the fan off and on as he sees need for. Manual control is satisfactory where the attendant at the barn is on hand to take care of the fan in case there is a sudden change in temperature. In moderate weather, such that a fan can be allowed to run all night, there is no need for anything but manually operated fans. In severe weather they may be inconvenient as it might not be advisable to leave all fans off during the entire night. However, if it is possible to maintain a temperature of 42 or 45° there is no reason why the fans cannot be operated continuously.

One thing that is primarily essential for the comfort of a cow is a warm barn. Unless a barn is so constructed that a temperature of at least 40 or 45° can be maintained, it is too cold for comfort and almost impossible to do a good job of ventilating.

If it is unsatisfactory to operate the fans manually, they can be operated in conjunction with a thermostat that will cut out when the temperature goes below any given point and as the temperature then goes up beyond a certain other point it will turn the fan on again. This way, there is no reason for any human attention whatever except to give the fan an occasional once-over, to oil the motor and to keep the fan well cleaned off.

Fan systems are very easily controlled to give just the condition desired in a barn. There is a fan system to fit any barn or condition.

Intakes can be taken care of in about the same manner as they have been with gravity systems. They are not as necessary when a fan is used because the fan is power driven and the fans will pull in a large amount of air through small cracks around windows, doors, etc., where the gravity system will not.

The original cost of fan installations will run from $5 to $10 per cow, varying with the amount of space allotted each animal. The energy used will vary from 10 to 30 kilowatt-hours per cow. per year, depending on the type of installation and the condition the farmer wishes to maintain.

Warning

Any old fan installed in any old way does not constitute a ventilating system. Be sure to consult a ventilating engineer before investing in fans or attempting to install them, as this is a job for a man who is specially trained in this kind of work.

A good ventilating system will improve your barn conditions and this will in turn increase the output of your herd and will make working in your barn far pleasanter.

ELECTRICAL HOUSEKEEPING

Conducted by
GAIL MEREDITH

A WATCHED POT

WHEN you cook with electricity, the design of your pots and pans has an important bearing upon economy and efficiency.

That does not mean that your dishes must necessarily be new, nor even that they must have been planned and built particularly for electric cooking. It does mean that you must pick out from the pans in your cupboard those that are big enough to cover the heating coils completely, flat enough to set down tight on the burner, and well enough covered to keep the steam in. That is you must pick out dishes like that if you can.

If your cupboards are at all like those of most of us who have been married going on a score of years, they will try to palm off on you a miscellaneous collection of kettles and pans of every size and shape. Probably some of them will teeter back and forth on the burners. Mine did. And very likely the covers will not fit at all. Mine didn't.

If you were to use them with this new fuel, you would waste current and time in getting your meals. It is thriftier to start out right.

There is a sound reason back of each feature in the design of these dishes. You can see at once that the pans must be as big as the burners to use all of the heat. A glowing coil of wire beyond the edge of the pan is wasting most of its heat as far as cooking the food in that pan is concerned. They should be flat on the bottom so they will fit down closely over the burner because air is a very poor conductor of heat. If they are so warped and buckled that they hit the unit only in one or two places, part of the heat that should be carried directly from the glowing wires to the metal of the dish is wasted on the kitchen air.

The dark enamel on the bottom of this dish is designed to absorb the radiant electric heat more quickly.

That both slows up the cooking and wastes the current.

Their sides should be as nearly straight as possible, because in a straight sided dish the food is all over the heat; their covers should fit tight to keep the steam inside the kettle to help with the cooking.

Can Be Had in Enamel or Aluminum

You can buy dishes like this in both enamel and aluminum today. The material is a matter of personal choice. Of course it should be heavy enough so the bottom will not buckle and spoil the contact with the unit. Fairly heavy aluminum dishes do not heat quite so quickly as the lighter ones, but they keep the food boiling longer, and they do not warp. Attractive enamel dishes in light colors are being designed to fit the burners on any range.

In further effort to bring kettle and range into strict cooperation several manufacturers are making black bottomed pans. They claim black absorbs the radiant electric heat more rapidly and completely than a polished surface. You can buy these black bottomed pots in both enamel and aluminum. Some makers of aluminum kettles give the bottoms a satiny surface instead of the reflecting mirror finish.

The tops as well as the bottoms of these pans have been undergoing a great many changes. Covers simply must fit snugly if you are to cook your potatoes with half a cup of water instead of

The cover fits snugly in this deep groove.

STOP THE WASTE OF CUTTING ICE

for milk cooling

CUTTING ice for milk cooling costs the dairy farmer money, time, worry, inconvenience. Ice cutters, ice houses, and sawdust cost money. Cutting and hauling ice take time. Because of melting, twice as much ice as needed must be hauled. Daily trips to ice the cooler steal more time. It's an expensive, inconvenient, inefficient way to cool milk. Free yourself from such expense and labor.

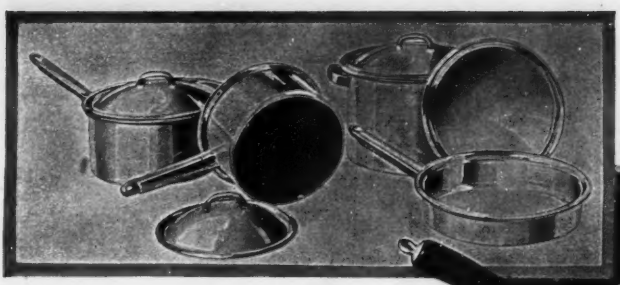
A modern General Electric Milk Cooler will lower the bacterial count . . . enable you to sell a higher grade of milk at a premium . . . eliminate all spoilage . . . save your time . . . and pay for itself times over. Let General Electric solve your milk cooling problems.

•

General Electric Company, Electric Refrigeration Department, Section CZ1, Hanna Building, 1400 Euclid Ave., Cleveland, Ohio.

GENERAL ELECTRIC

MILK COOLERS



Left: A well designed set of dishes for surface cooking. Below: A well designed dish, staright sides, flat bottom, tight cover, ample width to cover the burner.

a quart, and you can do it with steady, controlled, electric heat. And you probably want to since heating half a cup of water to boiling takes less time and current than heating a quart. The saving of time is for you, and the current for the budget, you know.

Deep Grooved Pans

Heavy covers may fit down into grooves like that in the sauce pan pictured above. The moisture condenses on the cover and runs down into this groove making a water seal that keeps the steam in. With covers like this the food comes to a boil quickly, and it takes little current to keep it boiling.

The newest development of all in this matter of covers gives the lie to that ancient proverb "A watched pot never boils." These covers are made of glass that snatches away the last vestige of privacy from a boiling rutabaga or a frying pork chop.

And a smart thing it is, too, if you ask me. Not long ago, Mrs. Nell Nichols writing on electric cooking, said, "Of all the foolish mistakes made in cooking, the most unnecessary one is that of frequently removing kettle lids to see what progress the cooked food has made. Such a procedure permits the steam to permeate the house, carrying food odors with. . . . The steam belongs in the pot; where it attends to its own business, namely that of making foods tender."

We agree with Mrs. Nichols that it doubtless is a foolish mistake, but we have never been able to entirely restrain our curiosity and keep from looking now and again—which lost us a lot of lovely steam we know, but kept us up to date on just how dinner was coming along.

Watch Your Dinner Cook

With these new glass topped dishes we can satisfy our curiosity and keep the steam in, too.

This liaison between the metal manufacturers and the glass makers apparently was brought about because women like you and me found that the cover of a broken casserole fitted beautifully on that kettle that had lost its top—and told somebody else how well it worked.

Anyway one of the range manufacturers got hold of it, and he was so taken with the idea that he promptly set to work fitting out the dishes he sells for his range with new glass tops.

Cooking under glass. No need to lift kettle lids to see what progress the food has made.

SHISH KEBABS

If you never saw a shish kebab
I hope you soon will see one.
But this I tell you anyhow,
I"d rather eat than be one.

WITH apologies to Gellet Burgess and his Purple Cow that can never be a shish kebab!

I do not think that the Bureau of Home Economics in the Department of Agriculture made up this name. I do not believe they could. So it must be a real name used somewhere by people who have shish kebabs most any day as we have lamb chops or hamburger. They originated somewhere in southeastern Europe where lamb is the chief meat, and they are usually made of lamb.

"The shoulder cut is the most economical for the purpose," advises the Bureau in recommending them to us to add variety to the family menu.

"When you buy the meat, the butcher will doubtless give you or sell you for very little a half dozen of the metal skewers which he uses for roasts. Have all the bones removed from the lamb shoulder. Cut pieces of lean meat about 1½ inches square and 1 inch thick from the well fleshed parts of the shoulder. This meat is usually very tender and is best when quickly cooked. Put four of five of these pieces on a skewer with alternating small squares of bacon. A medium sized shoulder will provide enough meat for about seven skewers. Lay the kebabs in a dripping pan and broil them from 12 to 15 minutes. Turn frequently for uniform cooking. When the meat is done, season with salt and pepper and serve at once, on the skewers.

"Make a broth or stew from the bones and the parts of the shoulder not suited for kebabs, and there will not be any waste."

• • •

Shopping for a Cleaner

SELECTING a vacuum cleaner is not at all like selecting a husband, a matter of the heart. It is a matter that calls for seasoned judgment, a great weighing of pros and cons, a careful consideration of price tags, in other words,—shopping around.

A mere aimless wandering from shop to store, gazing on one vacuum cleaner after another is not enough. Vacuum cleaners all look so much alike that a general survey would scarcely do more than make you familiar with the three types of cleaners, those that depend on suction alone, those that add a friction brush like a carpet sweeper, and those with a motor driven brush.

If you have not decided before you begin which type you want, your first preliminary prowl may convince you. But before you buy any cleaner, try it on your own rugs in your home.

Any vacuum cleaner salesman will be glad to bring out different models of the machine he sells and show you what they can do. After he has put a cleaner through its paces, take it yourself and run it.

There are several things to look for when you are studying a vacuum cleaner.

The first is the way it cleans, of course. If you will trundle it over to a rug you have left unswept so it is rather specially dirty for just this test, and run it awhile, you can see whether the rug looks clean and feels clean. See if it will pick up dust you have pushed together with a dry mop on the bare floor at the edges of your rugs.

The next may be the way it moves. It should slide over the rugs so easily that you have only to guide it, never to push. The handle should slip back into running position easily, and stand upright by itself when you want to leave it alone.

Then there is the adjustment that raises and lowers the nozzle of the cleaner to fit bare floors, thin rugs, thick rugs. The salesman will tell you

(*Continued on page 22*)

ASK YOUR DEALER

to show you how much you save through buying now

WHILE we have greatly reduced our prices, there has been no cheapening of design, no lowering of quality! The same reliable MYERS Pumps and Water Systems you have always known—now offered at economy prices never before possible for products of such high quality.

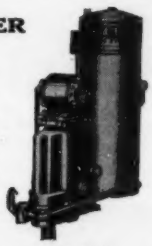


Fig. 2700
Deep Well System

MYERS
Self-Oiling
Water Systems

Fig. 2510
Shallow Well System

For deep or shallow wells: for operation by hand, pump jack, engine or motor. The most complete line in the world. Capacities from 250 to 10,000 gallons per hour. Latest improved models from $65.00 up. Write for booklet and dealer's name.

F. E. MYERS & BRO. CO.
367 Orange St. Ashland, Ohio
Pumps, Water Systems,
Hay Tools, Door Hangers
"Pump Builders Since 1870"

Take Off Your Hat To The MYERS
PUMPS – WATER SYSTEMS – HAY TOOLS – DOOR HANGERS

A–PLEATING WE WILL GO

To attain cheerful and attractive lights

By MARY E. WEBBER
Home Lighting Specialist
Nela Park Engineering Department
General Electric Company
Cleveland

Fig. I—This shade's mellow yellow tone—informal pleats—and gay ribbon border provide just the cozy invitation this breakfast corner needs.

Fig. II—A pleated shade seems the happiest choice for this electrified whale oil lamp.

LIKE "a-Maying" or "a-haying," there's a romantic thrill in a-pleating when it involves new lamp shades for old lamps and fixtures. It's positively magical to transform—with a little patience and a few pleats!—simple, inexpensive materials into a delightful shade that spreads cheer and charm.

The pleated shade, straight-sided, is particularly appropriate for the drop cord lamp that we find so often over the table in small dining rooms or alcoves, or in bedrooms either near the bureau location or even in the center of the room. In the former case the cord sometimes needs lengthening, for the bottom of the shade, when in place, must only be 24 to 36 inches above the table (Fig. 1). Then as one sits at the table there'll be no chance of seeing the glaring lamp bulb itself. While in bedrooms it is desirable to shorten the center drop cord and so place the shade nearer the ceiling with a resulting larger and softer circle of light. The wire frame for pleated shades for these locations must have what is known as a screw fitter which secures the shades to the drop cord by screwing it on to the lamp socket.

Color and Material for Shades

It's the pleated shade, too, that seems to complete most suitably the old kerosene and whale oil lamps, jars, and bottles that have been wired for electricity (Fig. II). Here it is usually desirable to have quite slanted sides, so allowing the light to spread out over a larger area.

In planning these new shades, the color is of first importance—and the material of second. We must bear in mind that reds, blues, and greens absorb and so waste a great deal of light, and the light that does sift through is not of a flattering quality. On the other hand, ivory, yellow, and the palest tints do not absorb light appreciably, and the light that does come through is more cheerful and far more enhancing to its surroundings.

The material chosen—be it drawing, manila, cover, decorative wrapping or wall paper, book linen, parchment, or window shade material—must, when treated, allow plenty of light to come through it, must crease without cracking, and must have body enough to hold pleats. Very light weight papers may be made usable by lining them with shelf or any light weight inexpensive paper. Although some materials may be used just as they are bought, we find most of them are too opaque to allow the proper amount of light to filter through. Therefore, they must be treated with boiled linseed oil to make them sufficiently transparent to transmit the light. This oil is applied with a brush on both sides of the material, which is then hung up for about twenty-four hours to dry.

And now for the actual construction of a pleated shade! In purchasing the wire frame, bear in

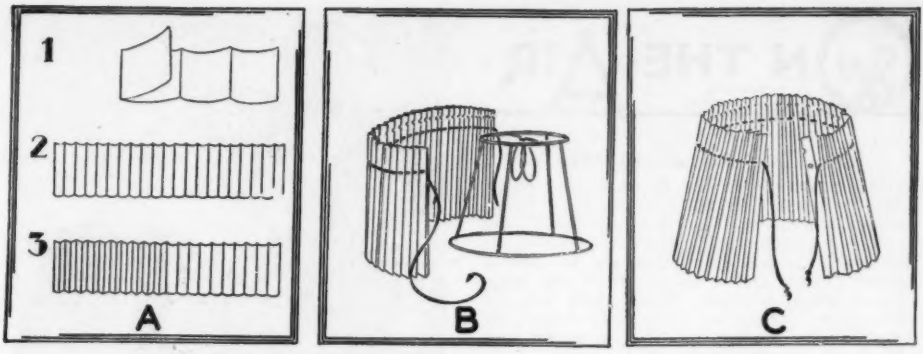


Fig. III. The principal steps in the mechanics of pleating are here illustrated.

mind that the completed shade is going to be at least two inches wider and two inches deeper than the frame. With the wire frame in hand, measure the length around the bottom ring and cut your material 2¼ to 2½ times this length. Measure the height of the frame, and make your shade at least two inches deeper.

In cutting out the material, be sure it is perfectly straight. If the material you use does not come in sufficient length, two or three pieces of *equal* length may be used. Do not piece them together with paste, but decorate and pleat each separately, joining them when completed. Do all tinting and decorating with oil paints applied with a wad of cloth while the material is flat.

The plainer shades—especially for the drop cord—are recommended. Outside of borders which may be painted on, crepe paper pasted on, ribbon, velvet or fabric sewed on, it is wise to obtain the decoration in the paper selected.

Then you are ready to pleat, and in this simple process care and precision must be exercised to keep each crease perfectly straight and true. First, fold this long, narrow piece of decorated material exactly in half, and make this (as well as every other crease) firmly, with the flat side of the thumb nail. Then open and fold the two ends into the center crease, thereby dividing the total length into four equal parts (Fig. III, A1) and make sure that each crease is folded in the same direction. Divide each of the resulting sections in half, and continue this process until the sections are about twice the width of the desired pleat. Up to this point no pleats have been made, each fold having been made in the same direction (Fig. III, A2). Now the pleating is actually done by dividing these folds in half, backwards and forwards (Fig. III, A3). This finished, the shade must be punched to fit on the frame. One row of semi-circular holes is punched one inch down from the top on the inside of the shade and on the edge of the pleat, and another row of circular holes 1½ inches lower in the center of each pleat. The semi-circular holes fit over the wire frame, and the circular holes carry the cord which holds the shade firmly in place (Fig. III, B). One fold is cut off the end of the pleating, making it possible to fit and paste the two ends together so that the joining is hardly noticeable (Fig. III, C).

A ribbon or cord is then run through the holes in the center of each pleat, and when pulled tight over the frame, holds the finished shade in place where you can point to it with pride and say to admiring friends, "I made it myself!"

"Did they call Leif Ericson the Lucky because he sailed to America?"—Harvard Lampoon.

"There you are, sir," said Dr. Knobbs to his patient. "My bill for improving your hearing comes to exactly $25."

The patient shook his head. "Did you speak, doctor?" he asked. "If so, I didn't hear a word that you said."

"Hm," sniffed the doctor, "perhaps I'd better make it $10."

"That's better, doctor," said the patient readily enough. "That's all right."

Clipped Cows Yield Most Profit

Cows in stables are harder to keep clean. One hair in the milk, or a piece of chaff, may add as many as 50,000 to the bacteria count. An important precaution against milk rejection is keeping your cows so clean that no dirt will fall into the milk. Thorough cleaning is impossible if long hair remains on flanks, udders and underlines to hold dirt, dust and chaff. Clip these parts short, simply wipe with a damp cloth, and germ-laden dust, hair, manure, etc. are easily removed.

Many dairymen report increased milk flow after clipping. A comfortable, contented cow actually gives more milk—clean milk—better milk. Get extra milk profit by clipping your cows regularly. Stewart Clipper prices are lower. The sensational new electric Clipmaster is described at right. Other clippers, $11.75 up. **Use same machine to clip horses and mules.** CHICAGO FLEXIBLE SHAFT COMPANY, 5524 Roosevelt Rd., Chicago.

STEWART ELECTRIC Clipmaster

Plugs in any electric light socket or runs from auto battery World's fastest, finest clipper. **Fully guaranteed by largest and oldest established makers of clipping and shearing machines.** At any dealer's or order direct, $2 down, balance C.O.D. Complete with Universal Motor for 110-120 volts. $17. Special voltages slightly more. When ordering, describe current.

$17

Aluminum handle model, $18

Get Free Catalog—Describes All Models—New Low Prices

ON THE AIR

Conducted by JEROME J. HENRY

How They Act at the Mike

SOME of the things they do when they talk to the microphone in the NBC studios: James Wallington leans on one foot and bends over the mike in a confidential manner. Walter O'Keefe fidgets with the desk microphone and his necktie. Howard Claney arches his eyebrows and keeps one arm behind his back. Theo. Alban, who has been singing "Happy Days Are Here Again" for three years on the familiar hour, wags his head in time with the music.

• • •

Pigtails Start Romance

HE dragged her pigtails through an ink well and won her everlasting love.

Tom Corwine, the famous animal imitator who does a lot of the dog barking, lion roaring, and many other duplications of animal voices we hear on the air, began his courtship when he was in the fourth grade in a school at Lexington, Kentucky.

Maude Deering, now Mrs. Corwine, sat in front of him, and "didn't tell," when Tom dipped her curls into the ink.

• • •

Radio Sets Often Cause Bad Reception

INVESTIGATIONS conducted by the Federal Radio Commission indicate that bad reception of radio programs is frequently caused by defective radio receivers. The tests, Commisisoner Charles Mck. Saltzman says, were conducted following receipt of many letters complaining that faulty reception was due to the allocation of air channels.

The Commissioner declares that the satisfaction of each radio listener in his radio depends upon the fidelity and sensitivity of the set.

• • •

Adventuring at the Radio Dial

WINTER evenings offer an abundance of time to go adventuring. Even though alone, one need never be lonesome as long as the faithful radio receiver is functioning properly, and the crisp atmosphere of winter materially helps us adventurers who still enjoy "pulling in" the distant stations.

A few evenings ago, for instance, I heard a Canadian station reading messages of friends to men who were stationed in the far north in early Autumn, there to perform the duties at trading posts in the "land of the midnight sun." Powerful Mexican stations and many in other countries may sometimes be heard. It's fun to compare their music with ours, and to try to understand their language as it floats out of our loudspeaker.

Then there's the holiday season, and although plans are not entirely complete, Christmas and New Year's day will offer new, striking, and unusual features. Music that breathes the spirit of the first of all holidays will be plentiful and many of the radio artists, always ready to contribute to the enjoyment of their listeners, will strive to make the season a bit more glad for all of us.

Here are two radio favorites from the early days of broadcasting. Billy Jones and Ernie Hare have been heard for a number of years and continue to be enjoyed by vast audiences.

• • •

TOM CURTIN was in one of the outlying precincts of the New York police department getting material for one of the police dramas heard over the NBC network. As he was leaving Curtin asked a detective if he listened in on the program.

"I heard one or two," he answered, "but not lately."

"If you get a chance, listen in next Tuesday night," Curtin suggested. "I think you'll enjoy that one."

"Can't," said the detective glumly. "Some bum busted in here and stole our radio."

• • •

Take a Piano Along

FEW people can take a piano along when they board a train. But the Boswell Sisters can. The railroad, hauling the trio from New Orleans to New York, especially installed a piano in the car for their rehearsals.

HOT WATER

When and Where You Want It

Many everyday uses—Poultry House, Milk House, Dairy Barn, Around the House. No more lugging buckets of hot water! No more wishing for some electrical device to drop into a milk-can of water (or any handy container).

CHROMALOX

10-gallon Electric Immersion Heater

Economical. Quickly heats from 1 to 10 gallons. Works from any 115-volt electric outlet (not lamp socket). SAFE, portable, yet rugged and durable. Developed especially for farm service.

Ask Your Power Company

or write for illustrated folder to Edwin L. Wiegand Company, Mfrs. Chromalox Electric Heating Units, 7580 Thomas Blvd., Pittsburgh, Pa.

IN LARGER FORM

Beginning with this issue, Electricity on the Farm appears in larger page size. The increase amounts to approximately seventy-five per-cent. The larger page makes possible the use of larger illustrations and increases the readability of its pages.

This change is in line with our endeavor continually to improve this magazine, and make it more interesting to our readers. We hope you'll like it in its new form.

—The Publishers.

Questions and Answers

Conducted by
H. J. GALLAGHER

Question: *I have two 4-inch x 14-inch iron pulleys and a quantity of four-inch elevator belting and elevator buckets 3½ x 3 x 3 inches.*

I would like to use this material in an elevator thirty-two feet high; what size motor, motor pulley and elevator drive pulley would be needed to elevate at the rate of about 200 bushels an hour.

Answer: Elevator cups 3½ x 3 x 3 inches have a capacity of 14.2 cu. inches, 150 buckets to the bushel, 30,000 buckets to 200 bushels. Buckets spaced one foot apart should empty at the rate of 500 per minute. This would result in a belt speed of 500 ft. per minute.

Belt speed in ft. per minute = .2618 x diameter in inches of elevator pulley x R. P. M. of shaft

500 divided by .2618 x 14 = shaft R. P. M.

Shaft R. P. M. = 140

Size of motor pulley 2-inch diameter

1750 R. P. M. of motor x 2-inch pulley divided by 140 = 25 in., size of drive pulley on shaft

Power required:

$$\frac{W \text{ \& } H}{33{,}000} = \text{Horsepower}$$

W = weight moved per minute

H = height weight is moved

200 bushels per hour (wheat) = 200 lbs. per minute

$$\frac{200 \text{ lbs. x H of } 32 \text{ ft.}}{33{,}000} = .194 \text{ Horsepower}$$

Allowing approximately 50% power losses due to friction in machinery, the size motor required would be ½ horsepower.

The motor could be mounted close to the drive pulley of the elevator and should be available for other uses when not operating the elevator.

• • •

Question: *Would a line shaft and one motor be cheaper than a number of motors on different jobs?*

Answer: From the standpoint of first investment, a line shaft and motor may cost less than a number of motors; that would depend largely upon the size and number of line shaft pulleys, belting size of motor and the number of jobs that could be satisfactorily operated from a line shaft.

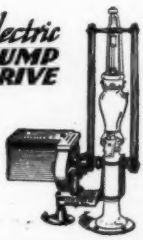
Farm jobs can generally be divided into two classes: those that occur daily and those that occur at infrequent intervals. In the first class is the water system, the cream separator, the milking machine, etc.; in the second class would be the grindstone, emery wheel, corn sheller, fanning mill, clipping machine, churn, concrete mixer, etc.

It would be a rare exception where these various jobs could be operated from one line shaft and even if they could, there would be the annoyance and inconvenience of changing the belts a number of times each day.

One of the biggest advantages of the electric

Cullman *Electric* PUMP DRIVE

Costs less to operate.
Quickly installed.



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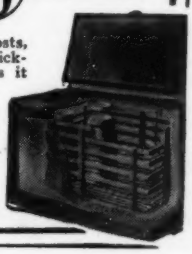
Write for descriptive folder.

CULLMAN WHEEL CO.
1342 Altgeld Street Chicago, Ill.

The **ELECTRIC** *Milk Cooler*

ESCO

increases profits, cuts costs, saves labor. Cools milk quickly to below 50° and keeps it cold.



Send for Full Information

Ask also about ESCO Electric Sterilizers and Water Heaters.

ESCO CABINET CO.
164 E. Market Street
WEST CHESTER, PA.

motor is that it saves time and adds to the convenience of doing farm chores. A line shaft installation has a decided tendency to minimize these important advantages.

Jobs in the first class—those occurring daily should be equipped with a separate motor, usually these jobs only require small motors, which are of the correct size for the work they have to do.

Jobs in the second class, occurring at infrequent intervals, can readily be operated with one motor and instead of bringing the job to the motor as is the case of a line shaft, it is usually better practice to take a portable motor to the job.

The power requirements of the various operations for the portable motor should be determined and the motor purchased should be large enough to care for the job requiring the most power.

I know of instances where the smallest portable motor on the farm, 5 H. P., was used economically to operate the emery wheel, fanning mill and grain elevator, jobs only requiring ¼ or ½ H. P., but lasting too short a time to warrant the investment in an additional motor.

In general, a ½ H. P. motor is the ideal portable unit. It will care for the large majority of jobs, even grinding grain with a 4-inch burr mill.

Equip the motor with a circuit breaker switch for protection from overload and for starting and stopping. Then find a number of jobs for it to do. Each additional job insures greater returns on the investment in the motor.

Shopping for a Cleaner

(*Continued from page* 17)

which adjustment to use, but if you forget, it is no great matter, for you can tell for yourself when you try it later. The nozzle should fit down tight enough so there will be what the manufacturer calls a good seal between rug and cleaner. But it must not be so tight that the machine is hard to push.

Push the switch on and off to see if it is conveniently placed.

Then while the salesman is there eager to help you get acquainted with the cleaner, learn how to take the bag off and put it back on. Do it a couple of times after you have watched him. That will show you whether taking it off and putting it on is as easy as it looks in his skilled hands.

Learn what care it needs besides cleaning the bag. Though this is not really a basis for choice between competing machines for all need much the same care, except that some need oiling once a month and some need greasing every year or two.

Lift it and carry it a little to discover its weight and balance. You will have to do that occasionally with the machine you buy and you want to know whether one handles better than another.

Salesmen with vacuum cleaners under their arms may come and go from your front door. But while you are considering the merits of one cleaner after another, you will be wise to look over the head of the salesman to the concern he represents, —and back of the vacuum cleaner to the company that made it. For no matter how carefully you use it, some day that cleaner is going to need servicing. Every machine does, and you want to be sure that the firm that sells your cleaner is going to be right there ready to repair it when you want repairs. If you buy from a reliable manufacturer and an established concern, they will stand behind that cleaner and keep it on the job of gobbling dirt at your house.

CLASSIFIED ADVERTISING

FREE BULLETIN on Electric Poultry Equipment describing Burglar Alarms, Brooders, Incubators, Heating and Thermostatic Supplies for home made equipment. Have proved they will work in your climate. Write for your copy today. LYON ELECTRIC COMPANY, 2075 Moore St., San Diego, Calif.

The PARAGON POULTRY TIME SWITCH is scientifically designed and approved by state universities. It provides automatic control both morning and night and DIMS THE LIGHT AT NIGHT to allow the hens to return to roost. Low price and UNCONDITIONALLY GUARANTEED. Write for full information today. PARAGON ELECTRIC COMPANY. Van Buren and Dearborn Sts., Chicago, Ill.

Under The CHESTNUT TREE

The Hag He Chased

A backwoods mountaineer one day found a mirror which a tourist had lost. "Well, if it ain't my old dad," he said, looking at it. "I never knowed he had his pitcher took."

He was so pleased he took the mirror home, stole into the attic and hid it. But his actions did not escape his suspicious wife. That night, after he was asleep, she slipped to the attic and found it. "Hm-m-m," she said, looking into the mirror, "so that is the old hag he's been chasin'."

"I could go on dancing like this with you forever."

"Oh, no you couldn't, you're bound to improve in time."

"Drink," said the Irish preacher, "is the greatest curse of the country. It makes ye quarrel with yer neighbors. It makes ye shoot at yer landlord. And it makes ye miss him."

Revenge

A crowd had gathered around the poor man who had been bitten by the mad dog. A doctor was administering first aid.

Presently the patient sat up. "Doctor," he said in a hoarse whisper, "give me a piece of paper."

The doctor placed a kindly hand on the man's shoulder. "Tut, tut, my good fellow!" he said, "You're all right; you needn't worry about making your will so soon."

"I don't want to make a will," said the victim, with a slight smile. "I want to make a list of the people I'm going to bite."

Teacher: "Johnny, why does Missouri stand at the head of mule-raising of the United States?"

Johnny: "Because the other end is dangerous."

Imposter

A proud young father wired the news of his happiness to his brother in these words:

"A handsome boy has come to my house and claims to be your nephew. We are doing our best to give him a proper welcome."

The brother failed to see the point and wired back: "I have no nephew; the young man is an imposter."

A philanthropic woman was visiting a lunatic asylum. There was one old man there who roused her special compassion.

"How long have you been here, my poor man?" she asked.

"Twelve years."

After several more questions she passed on, and her guide informed her that the old man was the medical superintendent.

"I'm so sorry, doctor," she cried, hurrying back. "I'll never judge by appearances again."

FRONT COVER TITLE CONTEST

November Cover

WINNERS
of November Contest

1st Prize-$25.00

"It all depends on the range."

FRANKLIN SCHOCKOW,
R. 2, Churchville, N. Y.

The following have been awarded $5.00 cash prizes:

"From the open range to the electric range."
HOWARD J. DAILEY,
P. O. Box 443, Lafayette, La.

•

"Two perfect ranges — A duck of a combination."
MRS. R. E. CRAWFORD,
R. 2, Davisburg, Mich.

•

"In range of the gun and the electric range."
MRS. HARLEY COOK,
R. 1, Montrose, Mich.

•

"A long 'range-shot,' but a short 'range-job'."
NEIL GRUBB,
R. 5, Oskaloosa, Iowa

•

"Flying within firing range — Doomed to a fireless range."
MRS. M. P. HILDRETH,
R. 1, Sherborn, Mass.

RULES FOR JANUARY

The whole family can join in these cover title contests.
The rules are simple but be sure to read them carefully.

There will be one first prize of $25.00 and five second prizes of $5.00 each. In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Titles should not be longer than 15 words—the shorter the better—and they need not be rhymes.

Send your title on the coupon below or make out a similar form on a plain sheet of paper or government post card.

Question "A" must be answered correctly.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 6 No. Michigan Ave., Chicago, Ill., before February 1st.

Winning names and titles will be announced in the March issue.

Follow these simple rules. Your Editor cannot answer letters about the contest.

My title for the January Front Cover picture of ELECTRICITY ON THE FARM is.....

.....

.....

.....

(A) Do you like ELECTRICITY ON THE FARM better in the larger size?.....

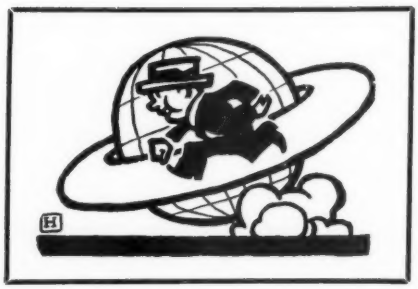
Why? .....

.....

My name is ..... R. F. D. .....

Post Office..... County..... State 12-32

What's in Store for 1933



THIS new deal that we are all hoping and looking for will come not to those who wait, but rather to those who do something about it. So let's be up and doing.

● As evidence that we are on the job we bring you this month a new, bigger and finer ELECTRICITY ON THE FARM so that you may more easily read and better understand how electricity can help you to a new deal.

● Resolve now that you will make 1933 a more prosperous and more comfortable year for you and yours. Let electricity help you. Nearly every farm chore can be done more cheaply and more efficiently with electric power. Even the work in the house can be easier and better done if electrical servants are employed.

● Make electricity your slave instead of letting your farm enslave you!

● For further information about any application for electricity you do not find in this magazine, get in touch with Your Power Company or ELECTRICITY ON THE FARM, 24 West 40th St., New York, or 6 N. Michigan Ave., Chicago.

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